



RESOURCE AND PATIENT MANAGEMENT SYSTEM

Bar Code Medication Administration Configuration and Test, Super User, Pharmacy Training, and Go Live

Announcement and Agenda

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Choctaw National Health Care Center
Talihina, Oklahoma

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1.0 General Information

1.1 Background

The Centers for Medicare and Medicaid Services (CMS) recently published a final rule that specifies the Stage 2 criteria that eligible professionals (EP), eligible hospitals, and critical access hospitals (CAH) must meet in order to continue to participate in the Medicare and Medicaid Electronic Health Record (EHR) Incentive Programs. Through the Stage 2 requirements of the Medicare and Medicaid EHR Incentive Programs, CMS seeks to expand the meaningful use of certified EHR technology. Certified EHR technology used in a meaningful way is one piece of a broader health information technology infrastructure needed to reform the health care system and improve health care quality, efficiency, and patient safety.

This final rule specifies the Stage 2 criteria that EPs, eligible hospitals, and CAHs must meet in order to qualify for Medicare and/or Medicaid EHR incentive payments. In addition, it specifies payment adjustments under Medicare for covered professional services and hospital services provided by EPs, eligible hospitals, and CAHs failing to demonstrate meaningful use of certified EHR technology (CEHRT) and other program participation requirements. This final rule revises certain Stage 1 criteria, as finalized in the July 28, 2010 final rule, as well as criteria that apply regardless of Stage.

New Core and Menu Set Objectives and Measures for Stage 2:

Automatically track medication orders using an electronic medication administration record (eMAR)

(16)(i) Objective. Automatically track medications from order to administration using assistive technologies in conjunction with an electronic medication administration record (eMAR).

(ii) Measure. Subject to paragraph (c) of this section, more than 10 percent of medication orders created by authorized providers of the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) during the EHR reporting period for which all doses are tracked using eMAR. (iii) Exclusion in accordance with paragraph (i)(2) of this section. Any eligible hospital or CAH with an average daily inpatient census of fewer than 10 patients.

1.2 Bar Code Medication Administration Assistive Technology

Bar Code Medication Administration (BCMA) assistive technology is a software application which is used by the Veterans Health Administration (VHA) facilities to document medication administration activities and reduce medication errors. Ensuring the software is usable is paramount to successful adoption by the end-users. The Bar Code Resource Office (BCRO), using a Cognitive Engineer/Human Factors expert, has developed a structured process for performing usability assessments of new features under development. The following information is provided as a guide to assist the BCMA Software Development team in applying a structured process to future usability assessments.

Stage 2 Eligible Hospital and Critical Access Hospital Meaningful Use Core Measure 16 of 16

Automatically track medications from order to administration using assistive technologies in conjunction with an electronic medication administration record (eMAR).

More than 10 percent of medication orders created by authorized providers of the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) during the EHR reporting period for which all doses are tracked using eMAR.

Exclusion

Any eligible hospital or CAH with an average daily inpatient census of fewer than 10 patients.

1.3 Definition of Terms

electronic Medication Administration Record (eMAR): Technology that automatically documents the administration of medication into certified EHR technology using electronic tracking sensors (for example, radio frequency identification (RFID)) or electronically readable tagging such as bar coding).

Average daily inpatient census: The total number of patients admitted during the previous calendar year divided by 365 (or 366 if the previous calendar year is a leap year).

1.4 Attestation Requirements

DENOMINATOR: Number of medication orders created by authorized providers in the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) during the EHR reporting period.

NUMERATOR: The number of orders in the denominator for which all doses are tracked using eMAR.

THRESHOLD: The resulting percentage must be more than 10 percent in order for an eligible hospital or CAH to meet this measure.

EXCLUSION: Any eligible hospital or CAH with an average daily inpatient census of fewer than 10 patients.

1.5 Certification and Standards

The following is the corresponding certification and standards criteria for electronic health record technology that supports achieving the meaningful use of this objective.

§ 170.314(16) Inpatient setting only – electronic medication administration record

(i) In combination with an assistive technology that provides automated information on the “rights” specified in paragraphs (a)(16)(i)(A) through (E) of this section, enable a user to electronically verify the following before administering medication(s):

(A) Right patient. The patient to whom the medication is to be administered matches the medication to be administered.

(B) Right medication. The medication to be administered matches the medication ordered for the patient.

(C) Right dose. The dose of the medication to be administered matches the dose of the medication ordered for the patient.

(D) Right route. The route of medication delivery matches the route specified in the medication order.

(E) Right time. The time that the medication was ordered to be administered compared to the current time.

(ii) Right documentation. Electronically record the time and date in accordance with the standard specified in § 170.210(g), and user identification when a medication is administered.

*Depending on the type of certification issued to the EHR technology, it will also have been certified to the certification criterion adopted at 45 CFR 170.314 (g)(1), (g)(2), or both, in order to assist in the calculation of this meaningful use measure.

§ 170.210(g) Synchronized clocks

The date and time recorded utilize a system clock that has been synchronized following (RFC 1305) Network Time Protocol, (incorporated by reference in § 170.299) or (RFC 5905) Network Time Protocol Version 4, (incorporated by reference in § 170.299)

2.0 Purpose of Training

BCMA is an integral part of the Electronic Health Record. Nurses administer medications, including IV piggy-back medications and IV large-volume medications through BCMA. All information is documented with a time stamp for improved accuracy of clinical information. The documented administration information is available throughout the medical center to any clinician or pharmacist as part of the integrated health record. Pharmacy and nursing staff members must collaborate closely with information management staff, if the medication administration arm of a hospital care system is to work optimally; just as rapid computer response time is crucial to the success of a computerized medication administration system. The purpose of this activity is to provide BCMA training to the BCMA Super User.

2.1 BCMA Coordinator

The BCMA Coordinator is responsible for developing and implementing processes to improve the safety, efficacy, and efficient of medication management processes associated with BCMA. BCMA Coordinators need to understand how the software functions and how pharmacy's finishing of orders affects what appears in BCMA. Coordinator responsibilities include but are not limited to:

- Acts as a liaison between the IHS Bar Code Resource Office and facility level management.
- Serves as a liaison between administration, clinical staff, and IT regarding BCMA medication management process.
- Monitors and reports effectiveness of change outcomes to local management and national oversight groups.
- Recommends local procedural and policy changes as appropriate.
- Test and verifies updates, patches, and new releases of BEMC prior to activation.
- Disseminates information to end users on policies and procedures.
- Facilitates training, installation, maintenance, and overall use of BCMA throughout the hospital.
- Provides user support to nursing, pharmacy, and other service lines by troubleshooting operational issues.
- Plans and ensures initial ongoing training for all BCMA users, students, and temporary staff.
- Designs, develops, updates, and maintains training documents within the facility.
- Actively participates in local facility multidisciplinary committee.
- Participates in the national BCMA conference calls and training initiatives.

- Develops, implements, and monitors a performance improvement plan for the medication management process as it relates to BCMA.

2.2 BCMA Multidisciplinary Committee

The BCMA Multidisciplinary Committee provides ongoing multidisciplinary support to implement any necessary changes to improve the proper use of the software, affect oversight and maintenance of equipment, and provide guidance on business-related processes. This committee should meet monthly to resolve BCMA issues and is often a sub-committee of the Pharmacy and Therapeutics Committee. The BCMA Multidisciplinary Committee which comprise end users and affiliates who can act as change agents at the local facility. Both the BCMA Coordinator and BCMA Multidisciplinary Committee work together to ensure patient safety is optimized, and this teamwork is central to BCMA success.

- BCMA Multidisciplinary Committee Responsibilities include but are not limited to:
- Oversees medication manage process and interdependencies
- Creates accountability and an ownership approach to BCMA use
- Guides facility or health care direction
- Assesses, treats, and standardizes clinic, technical and operational direction
- Recommends policy and procedural changes to optimize BCMA use
- Centralizes and streamlines systems and process channels
- Provides guidance to facility sponsors and end users
- Supports and maintains best practice models
- Provides early warning of performance deficiencies and makes recommendations for improving performance to achieve business results
- Facilitates alignment of BCMA performance objectives with facility or health care system strategic goals

BCMA Multidisciplinary Committee Membership should include:

- BCMA Coordinator
- Clinical applications coordinator
- End users authorized to administer medications
- Information technology
- Inpatient pharmacy
- Union representatives if applicable
- Performance improvement

- Patient safety
- Respiratory therapy (if applicable)
- Chief of medical staff
- Nurse management

2.3 BCMA End User and Super User

A BCMA End User is an individual who uses BCMA for medication administration in a patient care setting.

A BCMA Super User is an individual who uses BCMA for medication administration in a patient care setting and also serves as a support resource to other BCMA users.

Verified medication orders become available in the nursing staff's point-of-care BCMA. The Virtual Due List (VDL) is the electronic counterpart of an electronic Medication Administration Record (eMAR), and is used to display medications and the appropriate administration time frame for each. Medications may be scanned and administered, following a medication orders verification by an end user nurse authorized to administer medications.

As a handheld bar code reader registers each medication, the software verifies the correct medication was ordered, administered on time, and measured in the correct dosage, while at the same time documenting the actual administration of the medication. This process ensures the ***Five Rights*** universal standard of medication administration is maintained. Once the medication administration procedure has been completed for a particular timeframe, the nurse uses the Missed Medication function to generate a report of omitted medications and takes steps to resolve any reported discrepancies.

Recording and reporting features of BCMA include:

- **Virtual Due List (VDL):** Records medications that need to be administered to a patient within the specific time parameters. These include active Continuous, PRN, On-Call, One-Time medication orders.
- **Due List Report:** Provides detailed information about active and future Unit Dose and IV Medication orders that are due for administering to a patient, within a specific timeframe during a 24-hour period.
- **Medication Administration History (MAH) Report:** Lists the patient's Unit Dose and IV medication orders and any actions taken on the order.
- **Medication Log Report:** Displays a detailed history of actions taken on a patient's medication orders.

- **Missing Dose Requests:** Automatically alerts Pharmacy personnel of a Missing Dose order by printing requests for reissuing on a designated printer in the Pharmacy. This method minimizes the nurses' workload disruption to the Pharmacy and Nursing workflow. An email notification is also sent from the BCMA to the Pharmacy when a Missing Dose Request is submitted by a clinician.
- **Missed Medications Report:** Includes Continuous and One-Time Unit Dose and IV Piggyback medications that were not administered to a patient during a medication pass, within a specific timeframe, during a 24-hour period. This Report also includes Missing Dose Requests submitted to the Pharmacy.
- **PRN Effectiveness List:** Identifies PRN or *as needed* medication doses that require Effectiveness comments after they are given.
- **Medication Variance Log:** Logs medications given outside the medication administration window as Early or Late (depending on the site parameter settings), including the time it was scanned, and the reason it was administered early or late, any comments from the nurse, late PRN Effectiveness documentation, and event totals and percentages.
- **Patient Record Flag (PRF) Report:** Prints detailed information about any active PRF assignments associated with the current patient record.
- **Cover Sheet-Medication Overview Report:** Displays and groups active, expired or discontinued, and future expiring orders.
- **Cover Sheet-PRN Overview Report:** displays and groups active, expired or discontinued and future expiring orders with a schedule type of PRN for the current patient or by selected patients on a ward. For each group, the total number of orders per group is displayed in brackets next to the group heading.
- **Cover Sheet-IV Overview Report:** Displays and groups IV bag information on active, expired, and discontinued orders for the current patient or by selected patients on a ward. For each group, the total number of IV bags per group is displayed in brackets next to the group heading.
- **Cover Sheet-Expired/DC'd/Expiring Orders Report:** Displays and groups expired and discontinued orders, as well as orders that will expire for the current patient or by selected patients on a ward. For each group, the total number of IV bags per group is displayed in brackets next to the group heading.
- **Medication Therapy Report:** Includes information similar to the Medication History Report but does not require a patient record to be open. The report allows searching by VA Drug Class, Orderable Item, or Dispense Drug within a specified date range and selected search criteria. This report can be run for the current patient or by selected patients on a ward.

- **IV Bag Status Report:** Provides status on IV bags, excluding available bags, by patient or by selected patients on a ward. This report allows the user to include/exclude completed, infusing, stopped, missing, held and refused IV bags. In addition, the user can include bags for which no action has been taken on order.
- **Unable to Scan (Detailed) Report:** Provides detailed information related to each *unable to scan* event for a selected ward/nurse unit, or for all wards. The report includes patient, date/time of unable to scan event, location, type of bar code failure, drug, user's name, reason for scanning failure and optional comments. The user can specify report selection criteria including start and stop date/time, type of scanning failure, and the unable to scan reason, in addition to up to three levels of sort fields.
- **Unable to Scan (Summary) Report:** Provides totals and percentages of wristband and medication bar codes scanned and when scanning is bypassed. The report will include totals and percentages for total wristband scanned, total wristbands bypassed, total medications scanned, and total medications bypassed. The user will be able to print the reports for the entire facility, by nurse unit/location or by ward.

3.0 VA-IHS BCMA Cross-Functional Team

3.1 Co-Chairs

Last Name	First Name	Title
Graves	Cathi	Senior Management Analyst, BCRO, Office of Informatics and Analytics (OIA), VHA
Taylor	David	BCMA Federal Lead, Office of Information Technology (OIT), Indian Health Service (IHS)

3.2 CFT Voting Members

Last Name	First Name	Title
Curtis	Clayton, MD	VHA IHS Liaison and IT Informatics
Patillo	Jackie	Acting Executive Director for Field Operations, Office of Information and Technology (OI&T), Department of Veterans Affairs (VA)
Kompkoff	Jeanette	RPMS Acting Investment Manager, OIT, IHS
Taylor	David	BCMA Federal Lead, OIT, IHS
Ayala	Mollie	Co- Project Manager, IHS BCMA Co-Federal Lead

3.3 Cross Functional Team Standing Members

Last Name	First Name	Title
Allen	Mike	BCMA Pharmacy Consultant, OIT, IHS
Bagby	Jonathan	Nurse Consultant, BCRO, OIA, VHA
Bishop	Bradley	Pharmacy Consultant, OIT, IHS
Burkybile	Deborah	BCMA Nurse Consultant, OIT, IHS
Connolly	Barbara	Clinical 1 Support Team, OIT, VA
Lyttle	Kim	Clinical 1 Support Team, OIT, VA
Bloch	Jaci	Clinical 1 Support Team, OIT, VA
Seburn	Cindy	Clinical 1 Support Team, OIT, VA
Cook	Sean	Business Analyst, DNC Contractor
Cownie	Kevin	Clinical 3 Support Team, OIT, VA
Darwin	Wil	Chair, IHS National Pharmacy Council
Devlin	Vitalia	Clinical Product Support Division Director, OIT, VA
Kathleen	Linville	Clinical Product Support, OIT, VA
Dial	Cornelius	Chair, Pharmacy Professional Specialty Group, IHS

Last Name	First Name	Title
Fox	Kirk	Clinical 1 Support Team, OIT, VA
Johnson	Dale	Clinical 2 Support Team, OIT, VA
Mian	Naeem	Clinical 1 Support Team, OIT, VA
Patten	Tracie	Acting Principal Pharmacy Consultant, IHS
Ray	Kathy	Clinicians' Information Management Technology Advisory Council (CIMTAC) Chair, Business Owner, IHS
Saddler	Chris	BCMA IT support, OIT, IHS
Stearle	Carla	BCMA Pharmacy Consultant, OIT, IHS
Taylor	Phil	BCMA Nurse Consultant, MSC Contractor
Tucker	Chris	Director, BCRO, OIA, VHA
Vinokur	Ella	Enterprise Systems Management, Health Provider Systems (Janet M. Reimer - Alternate)
Whaley	Catherine	Project Manager, DNC Contractor
Zeller	Jan	BCMA Education Project Manager, Employee Education System (EES), VHA

3.4 Subject Matter Experts (IHS Areas with Hospitals)

Last Name	First Name	Title
Bartlett	Robin	Clinical Applications Coordinator, Pharmacy Consultant, Nashville Area Office
Boykin	Max	Nurse Consultant, Nashville Area Office
Campbell	Brian	Pharmacy Consultant, Phoenix Area Office
Cross	Charles	Information Technology Specialist, Oklahoma City Area Office
Crossland	Eugenia	Clinical Nurse Informaticist, Phoenix Indian Medical Center (PIMC)
Dahozzy	Carol	Nurse Consultant, Phoenix Area Office
Eller	Jim	Information Technology Specialist, Cherokee Indian Hospital Authority (CIHA)
Freeze	Travis	BCMA Project Lead, Chickasaw Nation Medical Center (CNMC)
Green	Ross	Project Lead/CAC, Choctaw Nation Health Services Authority (CNHSA)
Grosfield	Cheryl	BCMA Coordinator, Choctaw Nation Health Services Authority (CNHSA)
Helm	Elizabeth	Director of Pharmacy, CIHA
Kennedy	Melissa	BCMA Coordinator, CNMC
Kuka	Verna	Information Technology Specialist, Phoenix Area Office
Lambert	Wanda	BCMA Coordinator, CIHA

Last Name	First Name	Title
Loving	Becky	Nurse Consultant, Oklahoma City Area Office
Mosely	Elvira	Clinical Application Coordinator, Phoenix Area Office
Olson	Matt	Pharmacy Administrative Data Processing Applications Coordinator, CNHSA
Patten	Tracie	Pharmacy Consultant, Oklahoma City Area Office
Randolph	Audrine	Information Technology Specialist, CNHSA
Rubin	Amy	Clinical Applications Coordinator, Oklahoma City Area Office
Simpson	Patrick	Information Technology Specialist, CNMC
Steers	Randy	Director of Inpatient Pharmacy Services, CNHSA
Toedt	Michael	Medical Director, CIHA
Von Bibra	Lynda	Clinical Application Coordinator, PIMC
Walling	Jeff	Pharmacist, PIMC
Wright	Mitch	Division of Information Resources Management Director, Nashville Area Office

3.5 Subject Matter Experts (VA – BCMA)

Last Name	First Name	Title
Strauss	Leanne	Nurse/BCMA Coordinator, VA New Jersey Healthcare System
Shum	Daphen	Pharmacist, Perry Point VA Medical Center, Perry Point, Maryland
Odle	Phillip R.	Nurse/BCMA Coordinator, Marion VA Medical Center, Marion, Illinois

3.6 Nashville Area Office BCMA Team

Last Name	First Name	Title
Bartlett	Robin	Clinical Applications Coordinator, Pharmacy Consultant, Nashville Area Office
Boykin	Max	Nurse Consultant, Nashville Area Office
Wright	Mitch	Division of Information Resources Management Director, Nashville Area Office

4.0 Detailed Agenda

All times are Central Time!

Sunday

Time	Topic
8:00 AM to 12:00 PM	<p>BCMA Super User Training (Session 1) At the end of this session participants should be able to:</p> <ul style="list-style-type: none"> • Access the BCMA Application <ul style="list-style-type: none"> – Access the BCMA Application from the computer desktop – Open the patient's medical record – Access the Reports menu to print out the Medication Due List – Scan the patient's wristband correctly – Confirm the correct patient – Resize columns – Identify the relative components of the Virtual Due List (VDL) – Access BCMA Clinical Reminders – Identify the relative components of the Cover Sheet functionality • Administer Medications <ul style="list-style-type: none"> – Access medication details – Assess scanner status – Submit a missing dose – Scan medications – Add a comment – Chart medications as Not Given, Refused or Held – Scan a PRN medication – Refresh the Due List – Enter multiple orders and multiple orders of the same medication – Enter early/late medications – Enter multi-dose containers – Enter injection site – Scan an On-Call medication – Enter PRN effectiveness – Enter removal of patches – Assess Scanning of wrong medication – Print Missed Medication Report • Administer IV & IV Piggyback Medications <ul style="list-style-type: none"> – Administer IV medications – Administer IV Piggyback medications – Access the BCMA Read-Only function – Access the IV Piggyback Tab – Use the Edit Med Log function

Time	Topic
8:00 AM to 12:00 PM (cont)	<ul style="list-style-type: none"> • Manage Scanning Failures <ul style="list-style-type: none"> – Access BCMA Managing Scanning Failures – Unit Dose – IVPB – IV Fluids – Limited Access • Use Other Features <ul style="list-style-type: none"> – Med order button – All reports function
12:00 PM	Lunch
1:00 PM to 5:00 PM	BCMA Super User Training (Session 2) See Session 1 Objectives
5:00 PM	Adjourn

Monday

Time	Topic
8:00 AM to 12:00 PM	BCMA Super User Training (Session 3) See session 1 Objectives
12:00 PM	Lunch
1:00 PM to 5:00 PM	BCMA Super User Training (Session 4) See Session 1 Objectives

Monday Evening

Time	Topic
6:00 PM to 10:00 PM	BCMA Pharmacy Training (Session 5) Order Entry Process At the end of this session participants should be able to: <ul style="list-style-type: none"> • Break down the RPMS EHR Order Entry Process: <ul style="list-style-type: none"> – Order entry via Medication Dialog – Order entry via Quick Orders – Unit Dose Orders – IV Orders to include IV Push, IV Piggyback, and IV Infusion

Time	Topic
	<p>Finishing Orders</p> <p>At the end of this session participants should be able to:</p> <ul style="list-style-type: none"> • Finish Orders: <ul style="list-style-type: none"> – Administration Time – Start/Date Time – Now Orders – Complex Orders – Sliding Scale – Fill on Request – IV Label Reprint vs. New Label – PCA Infusion – Auto-cancellation – Order Verification – Pharmacist Auto-verification – Contingency Plan – Changing Dispense Drug on Verified Order – Provider Comments and/or Special Instructions – IV Push – IV Piggyback – IV Admixture – Hyperalimentation (TPN)
	<p>BCMA GUI</p> <p>At the end of this session participants should be able to:</p> <ul style="list-style-type: none"> • Use the BCMA GUI: <ul style="list-style-type: none"> – Full vs. Read Only Access – Virtual Due List – BCMA GUI Tabs (Unit Dose, IVP/IVPB, IV) – Cover Sheet – Fractional Dose or Multiple Dose – Missing Dose Request – Medication not Displaying in BCMA – Unable to Scan Medication – Unable to Scan Patient Wristband – Wrong Dispensed Dose – User Bypassing Scanning – Using BCMA in Isolation Rooms – Run Managing Scanning Failures (MSF) Report – CPRS Med Order Button – RN Finish Key

Time	Topic
	Special Considerations At the end of this session participants should be able to: <ul style="list-style-type: none"> Examine Special Considerations: <ul style="list-style-type: none"> First Dose (TJC) Variable Doses (Policy Consideration) Variable Schedule (Policy Consideration) Flagged Orders
	Troubleshooting At the end of this session participants should be able to: <ul style="list-style-type: none"> Compare and Contrast Troubleshooting Issues: <ul style="list-style-type: none"> Scanners Bar Code Scan but Error Message "Drug not Found" Drug File Inquiry (PSB DRUG INQUIRY) Synonym Ender/Edit (PSS SYNONYM EDIT) PSD Patients on Specific Drugs (PSJ PDV) Bar Code Quality IV Bag Labels Order NOT Appearing on BCMA VDL
	BCMA Reports At the end of this session participants should be able to: <ul style="list-style-type: none"> Generate BCMA Reports: <ul style="list-style-type: none"> BCMA Unable to Scan (Detailed) on BCMA GUI Missing Dose Follow-up (PSB MISSING DOSE FOLLOWUP) Pick List Menu (PSJU PLMGR)

Tuesday

Time	Topic
8:00 AM to 12:00 PM	BCMA Super User Training (Session 6) See Session 1 Objectives
12:00 PM	Lunch
1:00 PM to 5:00 PM	BCMA Super User Training (Session 7) See Session 1 Objectives
5:00 PM	Adjourn

Wednesday

Time	Topic
8:00 AM to 12:00 PM	BCMA Pharmacy Training (Session 8) See session 5 Objectives

Time	Topic
12:00 PM to 2:00 PM	BCMA Coordinator Training (Session 9) At the end of this session participants should be able to: <ul style="list-style-type: none">• Parameters• Mail Groups• MSF Reports• Med Order Button• Edit Med Log – medications anyone has entered
2:00 PM to 10:00 PM	BCMA Go Live and Troubleshooting

Thursday & Friday

Time	Topic
7:00 AM to 10:00 PM	BCMA Go Live and Troubleshooting (continued)

5.0 Biographical Sketches

CAPT Michael Allen, MIS, RPh

EHR Pharmacy Consultant, IHS Office of Information Technology

United South and Eastern Tribes (USET) Regional Extension Center

CAPT Allen is a commissioned Officer in the USPHS. He came from a family of pharmacists and holds a BS degree from Idaho State University. He has a Master of Information Systems degree from University of Phoenix. He started with USPHS after working in retail pharmacy for a few years. During his years in IHS he has served in Portland Area, Phoenix Area, and currently is in Tucson Area. His duties have included, besides being a pharmacist: Site Manager, Assistant Site Manager, CAC, Pharmacy Package Administrator, and POS specialist. He serves on the Pharmacy PSG and was recently appointed to the POS Technical Advisory Group. His children are out of the house and he has one granddaughter he misses greatly. He lives in Tucson with his wife and cat.

LCDR Mollie Ayala, MHI

BCMA Co-Federal Lean and Project Manager, IHS Office of Information Technology

United South and Eastern Tribes (USET) Regional Extension Center

LCDR Mollie Ayala is a Commissioned Officer with the United States Public Health Service and has been with the Indian Health service and the Phoenix Area since 2002. She is a recent graduate of Arizona State University where she graduated with a Masters degree in Healthcare Innovation. In addition, she has served in a variety of positions ranging from IT Specialist where she implemented an area Support Center system that is still currently providing a centralized level of support for all Phoenix area facilities. She then moved on to become a Revenue Application Coordinator for the Phoenix Area – Management Services Organization. In this position she was responsible for providing specialized 3rd Party and Accounts Receivable application support for 12 clinics and hospitals. Her current role will be to serve a Deployment Coordinator/CAC for the ARRA EHR Meaningful Use training and deployment program.

Jonathon Bagby, MSN, MBA, RN-BC

Nurse Consultant

VHA Office of Informatics and Analytics, Bar Code Resource Office

U.S. Department of Veterans Affairs

Jonathan Bagby, MSN, MBA, RN-BC is a board-certified informatics nurse with over 10 years' experience with the VA, spending much of that time representing the interest of field nurses as a subject matter expert in developing the electronic medical record. Jonathan is a Nurse Consultant for the U.S. Department of Veterans Affairs' Bar Code Resource Office providing nursing informatics support and education to staff at the national level supporting over 150 VA medical centers. Prior to joining the Bar Code Resource Office, Jonathan worked for five years as the Nursing Informatics and BCMA Coordinator at McGuire VA Medical Center in Richmond, Virginia and led the nursing side of numerous projects (including revising the electronic medical

record orientation program for new nurses, developing an electronic report for patient handoff, developing an electronic staff scheduling assistance program, and the implementation of automated medication distribution cabinets).

Jonathan has presented topics at several national informatics conferences including HIMSS, VeHU, and the unSUMMIT and is a published author of several peer reviewed articles. Jonathan has an Associate of Science degree from Richard Bland College of the College of William and Mary, a Bachelor of Science in Nursing from Virginia Commonwealth University, and a Master of Science in Nursing and Business Administration in Health Care Management from the University of Phoenix. He holds a Master's Certificate in Project Management from the George Washington University School of Business and is board-certified in Informatics through ANCC. His clinical background is in medical, surgical, and orthopedic nursing and has worked as a staff nurse, nurse manager, nursing informatics/BCMA coordinator, and nurse consultant.

CDR Bradley Bishop, PharmD, MPH

Pharmacy Consultant, IHS Office of Information Technology

CDR Bradley Bishop is a Commissioned Officer in the United States Public Health Service and has been in the Indian Health Service since 2001. CDR Bishop received his Doctor of Pharmacy from the University of Tennessee College of Pharmacy and Master of Public Health from the University of Massachusetts-Amherst. He has been assigned to Sells, AZ, Tahlequah, OK, Tucson Area Office, and IHS Headquarters as a pharmacist, chief pharmacist, clinical applications coordinator, and pharmacy consultant. CDR Bishop currently serves

Jaculyn Bloch

Information Technology Specialist

Clinical 1 Support Team/Clinical Product Support

Product Development, Department of Veterans Affairs

Jaci is currently working as an Information Technology Support Specialist with the Department of Veterans Affairs. She started her career in 1984 as a Licensed Practical Nurse at the St. Cloud VA Health Care System working on the Nursing Home Care Unit. Jaci transferred to pharmacy, where she worked for 15 years as a registered pharmacy technician in all areas of the pharmacy including inpatient, outpatient, controlled substance management, inventory management and procurement. She has worked as Vista Applications Coordinator (ADPAC) in the Pharmacy and Business Office service line acting as the liaison between the service and IRM.

In 2008, she joined the VISN 23 IT Department as a Vista Applications Support Specialist for the Vista pharmacy packages providing Vista and COTS pharmacy support for all sites in VISN 23. Since 2011, Jaci has been working as an Information Technology Specialist for the Clin 1 Support Team, CPS, PD, Department of VA. Jaci's duties include reviewing and releasing software and supporting the Vista pharmacy packages including Inpatient, Outpatient, Controlled Substances, Drug Accountability, BCMA, and CMOP. Jaci is currently working on several projects and

workgroups including Electronic Prescribing of Controlled Substances (EPCS), IMR V, IMR VI, and BCMA for IHS.

CAPT Deborah Burkybile, MSN, RN, CPC

EHR Deployment Specialist, IHS Office of Information Technology

United South and Eastern Tribes (USET) Regional Extension Center

Deborah has been Registered Nurse for 32 years. During this time her nursing practice led her to work in a variety of private sector hospitals, clinics, tribal facilities, and for the last 20 years in Indian Health Service. Ms. Burkybile is a citizen of the Cherokee Nation of Oklahoma. She received her commission in the U.S. Public Health Service in 1988 and works from the Nashville Area Office, Indian Health Service where she had served Tribes and IHS facilities in the role of Area Managed Care Consultant. Currently she is assigned to support the implementation of the Indian Health Service Electronic Health Record by assisting the IHS Office of Information Technology as one of the EHR Implementation Team Consultants.

Ms. Burkybile is also a Certified Professional Coder and has worked diligently with the Nashville Area Tribes to train and certify coding professionals at the Service Unit, Tribal, and Urban levels. Health Care Compliance is another field of particular interest and work for Ms. Burkybile. Her knowledge and expertise in nursing has enabled her to provide assistance to Indian Health Service, Tribal, and Urban facilities from both clinical and business perspectives with a focus on quality health care service delivery.

Barbara Connolly

Information Technology Specialist

Clinical 1 Support Team/Clinical Product Support

Product Development, Department of Veterans Affairs

Barbara Connolly has been a member of the Clinical 1 Product Support team since 1998. In this capacity she has supported BCMA, Inpatient Medications and Outpatient Pharmacy and CMOP. She has been actively supporting BCMA since its inception in 1999. Prior to her position with Product Support she was the Data Manager for Primary care at the Albany VAMC. She was responsible for the management of the Primary Care teams and provided upper management with a variety of reports centered around provider work load. She mentored graduate school interns who were earning a degree in Public Health. Barbara also worked for 10 years as an IT Specialist for the Albany VAMC supporting a large variety of applications and developing local software.

Sean Cook (Contractor)

Applications Systems Analyst, Data Networks Corporation (DNC)

Sean Cook is an Applications Systems Analyst with Data Networks Corporation and has worked on contract with the Indian Health Service since 2010. His professional experience in Pharmacy spans more than a decade and includes in-depth experience in interoperability, automation, and team leadership. Sean spent several years with, Omnicare, the largest long term care pharmacy in Northern Illinois and a year with

Provident Hospital of Cook County, Chicago. Prior to coming to Albuquerque, he provided systems and programming support for six pharmacies at Columbia St. Mary's in Milwaukee.

Kevin Cownie**Information Technology Specialist****Clinical 3 Support Team/Clinical Project Support****Product Development, Department of Veterans Affairs**

Kevin Cownie is currently an Information Technology Support Specialist with the Department of Veterans Affairs. Prior to working for the Department of Veterans Affairs he was an Application Programmer for a manufacturing company and a member of the Air National Guard. He has 25 years of service with the Department of Veterans Affairs which included seven years as Chief, Information Resource Management service. He joined national support as a member of the National Database Integration Team. This team was responsible for integrating numerous VA Hospital databases. Currently as a member of the Clin 3 Support Team he is responsible for supporting and releasing software for BCMA Contingency, Clinical Procedures, Functional Independence Measurement, Home Based Primary Care, Medicine, My HealtheVet, National Database Integration, QUASAR, Radiology, Spinal Cord, Suicide Hotline, and VistA Imaging. He was heavily involved in the development of the BCMA Contingency package and more recently the startup of the Valley Coastal Bend Hospital along with the realignment of clinics in VISN 1.

Kirk Fox**Information Technology Specialist****Clinical 1 Support Team/Clinical Product Support****Product Development, Department of Veterans Affairs**

Kirk Fox has 22 years of service with the Department of Veterans Affairs; he is currently a member of Clinical 1 Support Team since 2008 as an Information Technology Support Specialist. In this position, Kirk has been charged with releasing and supporting software, including but not limited to BCMA, Inpatient Medications (both Unit Dose and IV Medications), and Outpatient Pharmacy packages.

Kirk has been involved with BCMA since version 1, at a site level and as active role in the BCMA Multi-Disciplinary for VISN 2 (five Integrated VA Medical Centers in New York). Additional VISN 2 roles include Application Support and Team Lead Application Support for BCMA for VISN 2. This position provided the opportunity to work on many projects assisting in the Development of National BCMA Contingency Plan, and the creation of BCMA Reports.

Prior roles in the VA include: Nurse Service, 6 years, Medical Administration Service, 2 years, and Information Technology Specialist, 14 years.

A firm believer in Gene Kranz's statement, "I don't care about what anything was DESIGNED to do, I care about what it CAN do."

Cathi Graves**Management Analyst, Bar Code Resource Office****Veterans Health Administration****Office of Informatics and Analytics****Health Informatics**

With over 27 years of VA experience, Cathi Graves is the senior Management Analyst for the Bar Code Resource Office (BCRO). Cathi is an accomplished professional with in depth knowledge of project management, contract management, information systems training, information systems support, and hospital executive support. Ms. Graves is consistently recognized by peers for her ability to manage the strategic implementation of information technology systems within the VA. As part of the BCRO management team, Ms. Graves provides Project Management and Contract Management oversight, as well as business operations management support, overseeing the contractual aspects of the Bar Code Expansion-Positive Patient Identification (BCE-PPI) Project. Her project management and training development expertise serve as an integral part of the BCRO work efforts to assist, implement and operationalize the use of VA's BCMA and BCE-PPI applications.

Ms. Graves earned her Project Management Certificate from Baldwin Wallace College and a Master's certificate in Project Management from The George Washington University in March 2004. Ms. Graves began her VA career in 1985 at the Dallas VA Medical Center transitioning from Executive Assistant to the Associate Director to Computer Assistant within the Information Resource Management (IRM) Office. In 1991, Ms. Graves transitioned to the Dallas IRM Field Office, National IRM Training Directorate, and was responsible for various Practicum Programs, planning, and delivery of VA National IRM Chiefs Conferences. She also provided oversight for the National IRM Training Program and provided contract oversight for national VMS System Management Training for IS professionals. Ms. Graves also provided National VistA Support for the Fiscal Management Team to support IFCAP, Pharmacy, and Fee Basis VistA applications.

In 1996, Ms. Graves joined the National Training and Education Office (NT&EO), now known as EES, as the National Education Project Manager for BCMA, Voluntary Service System (VSS), Patient Advocate Tracking System (PATs), Blind Rehabilitation V5.0, Veterans Personal Finance System (VPFS), VistA Blood Establishment Computer Software (VBECS), and the Medical Information Security Service. Ms. Graves also served as a National Education Project Manager for CPRS. In her Education Project Manager roles Ms. Graves was responsible for the management of all aspects of national training program development and execution. National training development and execution activities have included the delivery of training plans, objectives, and curricula, as well as overall management of SMEs/trainers and education assistant staff. In 1999, Ms. Graves was responsible for the planning and delivery of five national face-to-face training sessions for over 1,500 VA train-the-trainer staff, to support the deployment of BCMA. In her role with NT&EO, Ms. Graves frequently represented the Director on OI national workgroups including representatives from VACO Senior Executive offices in the establishment

of goals/objectives, processes, and tools as the VA moved from VistA to a HealtheVet architecture.

Dale K. Johnson, BSN, RN

IT Specialist, Clinical Product Support Team 2

Office of Information and Technology, Department of Veterans Affairs

Dale Johnson is currently an Information Technology Specialist with National Clinical Product Support, Department of Veterans Affairs. Prior to national support, Dale labored as a Clinical Application Coordinator at VA Salt Lake City Health Care System for 10 years. Dale was the Lead CAC and handled a variety of issues at the VA Hospital. He has previously been involved in training IHS facilities in regards to shared applications with the VA VistA health record; consults, notes, clinical reminders and his group was recognized for this support.

Dale has worked as a Registered Nurse at the Salt Lake VA Telemetry unit, Acute Medicine and Recovery. This experience gives him a working knowledge as an end user of an Electronic Medical Record. Dale Started at the VA in 1991 after 4 years in the United States Marines. He is a strong advocate for Veteran issues. In his spare time he likes reading and writing about himself in the third person or can be found camping with his family whenever time and weather permits.

Kim M. Lyttle, BS, MT(ASCP)

Information Technology Specialist

Clinical 1 Support Team/Clinical Product Support

Product Development, Department of Veterans Affairs

Kim Lyttle is a registered Medical Technologist and is currently an Information Technology Support Specialist with the Department of Veterans Affairs. She has several years of experience as a Medical Technologist in the private sector. She has over 26 years of service within the Department of Veterans Affairs, including six years as a Medical Technologist, and seven years as an Information Technology Specialist at Martinsburg VAMC.

Since 2000 Kim has been assigned as an Information Technology Specialist for the Clin 1 Support Team, CPS, PD, Department of VA. Kim has been charged with releasing and supporting software, including but not limited to BCMA, Inpatient Medications (both Unit Dose and IV Medications), Pharmacy Data Management, Dental, Surgery, Drug Accountability, and Controlled Substances. Kim released BCMA Version 2.0, and was one of the primary release people for IMR IV. She has received multiple awards and accolades for her work, especially with BCMA. She is currently working on several projects and workgroups including SQWM, IMR V, IMR VI, Patient Safety for BCMA and Inpatient Medications, the BCMA workgroup, the Inpatient Medications Workgroup, BCE, and BCMA for IHS.

Phil Odle, MSN, RN-BC**Informatics Nurse Specialist/BCMA-Coordinator****Marion Illinois Veterans Administration Medical Center**

Phil Odle obtained his Bachelor of Science in Nursing from Oklahoma Baptist University. While living in Shawnee, OK, he worked for almost ten years at Children's Hospital of Oklahoma in the Pediatric ICU and Post-Anesthesia Care Unit until 1991. During his time at Children's, he was a co-investigator on research in Parental Stressors in Neonatal and Pediatric ICU's and co-author of the published article based on that research.

He has been employed as a Registered Nurse in the VA since 1991. He began his VA career as a staff nurse in the Intensive Care Unit. He has held many positions within the facility, including ICU Nurse Manager, Clinic Float Nurse, Nursing Supervisor, and now he is the facility BCMA-C and Informatics Nurse Specialist. He was introduced to BCMA when it was first released to the VA in 1999. Beginning with his assignment as a Train-the-Trainer for version 2, he took on additional responsibilities with BCMA. He led a BCMA Collaborative Team related to Finishing After-hours Medication Entries to assist VA facilities which did not have 24/7 Pharmacy coverage. In 2012, he was one of several coordinators to serve as Mentors for a pilot program of virtual Mentoring for new BCMA coordinators, a project that was sponsored by the VA Bar Code Resource Office (BCRO). He obtained a Master of Science in Nursing (Nursing Informatics) degree from Walden University. He is board certified in Nursing Informatics. In addition to duties at his local facility, Mr. Odle serves on several regional and national committees and task forces, such as field-based Subject Matter Expert for the VA BCRO Oversight Board, Applied Informatics Service Issue Brief Review Team, Clinical Procedures Flowsheet Terminology team, Clinical Information Systems/Anesthesia Record Keeping (CIS/ARK) team, BCMA Web-Based Training team, and Nursing Informatics Field Alliance.

Chris Saddler, RN**Information Technology Specialist, IHS Office of Information Technology**

Chris Saddler began working for IHS in 1980 as a Nurse Epidemiologist at the Alaska Native Medical Center. In 1984, she joined the fledgling IHS RPMS Development Team. She was responsible for the initial development of the VA's Laboratory package and instrument interfaces for IHS. Transferring to OIT National Programs in 2003, her initial assignment was upgrading the Radiology package for EHR. Other projects included the upgrade to Kernel v 8 and other infrastructure packages, PCC+, Vista Imaging, Women's Health, and serving as IHS Database Administrator for two years. She provided technical support for EHR deployment in Alaska, and continues to support multi-division and urban sites.

Daphen Shum, BS Pharm, RPh**Pharmacy Supervisor/Informaticist (@ Perry Point Division)****BCMA Coordinator, VA Maryland Health Care System (VAMHCS)****Pharmacy Clinical Specialist, VHA PBM Clinical Informatics/Pharmacy Reengineering**

Daphen Shum is a registered pharmacist working in a variety of roles within the VA. She has over 31 years of service in the VA, with a few years working as a hospital pharmacist in the private sector. Her VA career started as a Pharmacy Technician. After becoming a pharmacist, when was involved in the initial implementation of DHCP / VISTA. She was involved as an ADPAC / Informaticist soon after she started working at VAMC Perry Point in 1988, in addition to working in both the inpatient and outpatient pharmacy areas. She was involved in the implementation of BCMA in 2000 and was appointed BCMA Coordinator in 2005. She was involved on the team from VAMHCS, selected as a part of the national BCMA Collaborative Breakthrough Series, to facilitate the resolution of issues to optimize the use of BCMA. Other BCMA projects include a VISN 5 Pharmacist BCMA training initiative, BCMA Cross-Functional Team and BCMA Web-based Training Planning team. Current projects include iEHR Pharmacy SME, iEHR Bar Coding SME and BCMA for IHS.

LCDR Carla Stearle, PharmD, BCPS, NCPS**ePrescribing EHR Pharmacy Consultant, IHS Office of Information Technology****United South and Eastern Tribes (USET) Regional Extension Center**

LCDR Carla Stearle is a Commissioned Officer in the United States Public Health Service and has been in the Indian Health Service since 2004. She received her Bachelor of Science Degree in Biology from Penn State University in 2000 and her Doctor of Pharmacy degree from the University of Maryland College of Pharmacy in 2004. Carla completed a pharmacy practice residency at W.W. Hastings Cherokee Nation Indian Hospital in 2004 and remained at Hastings as a staff pharmacist until 2009. During her years at Hastings she was a member of both the local EHR implementation team and the local Medication Safety Team. She is now employed as an ARRA Pharmacy Consultant with the Office of Information Technology.

CAPT (ret) David R. Taylor, MHS, RPh, PA-C, RN**EHR Training and Deployment Manager, IHS Office of Information Technology****United South and Eastern Tribes (USET) Regional Extension Center**

Captain (ret) Taylor is a retired Commissioned Officer in the United States Public Health Service and is a certified physician assistant, registered pharmacist, and registered nurse. He holds more than 36 years of public health, clinical, and clinico-administrative experience in the IHS as both a Commissioned Officer and Federal Employee. Mr. Taylor has served as a pharmacist, physician assistant, quality manager, risk manager, and compliance officer for the Pine Ridge, South Dakota and Cherokee, North Carolina Indian Hospitals. He has also served as an HIV/AIDS/STD consultant, performance improvement consultant, pharmacy consultant, diabetes clinical consultant, and RPMS health informatics consultant for the Nashville Area Indian Health Service. Since 2002 David Taylor has been assigned to the Indian Health Service Office of Information Technology as a National Medical Informatics

Consultant and has been charged with both training and deployment of the Meaningful Use of an Electronic Health Record throughout the entire Indian Health Care system. David was awarded the PHS Meritorious Service Medal (MSM) in recognition for his accomplishments in the EHR arena during his Commission.

Phil Taylor, BA, RN (Contractor)

Clinical Applications Specialist, Medsphere Corporation

Phil is a Clinical Consultant for Medsphere Systems Corporation. Phil has been a Registered Nurse for over 35 years. He holds a degree in Nursing from Vincennes University and a B.A. in Classical Studies from Indiana University. Phil provided clinical application support to VA Medical center staff using the Vista electronic medical record system for over 12 years prior to joining Medsphere. Phil's clinical history was primarily in Psychiatric Nursing. Currently Phil's primary responsibilities are providing training support (such as Basic CAC School and EHR for Inpatient) and configuration/setup support to OpenVista/EHR installations.

Chris Tucker, RPh

Director, Bar code Resource Office

Veterans Health Administration, Office of Informatics and Analytics

Health Informatics

Chris L. Tucker, RPh, is the Director of the BCRO within the Veterans Health Administration Office of Informatics and Analytics (VHA OIA). His office provides strategic direction and oversight for BCMA and other bar code technology applications such as Clinical Laboratory, Anatomic Pathology, and Transfusion Verification. He received his pharmacy degree from Kansas University in 1979 and a Masters Certificate in Project Management from George Washington University's School of Business and Public Management in 2003.

Mr. Tucker has been an Industry Adviser in the Prescription for Change Series, First Do No Harm for the Clinical Initiatives Center of the Advisory Board Company, Washington, DC. He was a member of the Executive Council for the Patient Safety Reporting System administered by the National Aeronautics and Space Administration (NASA) Ames Research Center from 2003 through 2009. Mr. Tucker co-chaired the Product Identification (GTIN) Workgroup for GS-1 US Healthcare from 2008 through 2012 working together with healthcare leaders to adopt and use standards that will help organizations share data, promote accuracy, and work more efficiently to improve patient safety and lower healthcare costs through healthcare track and trace technology standardization.

He has been involved in software development and performance management for medication administration bar coding since 1994, assisting in the development of the BCMA prototype software at the Topeka VA Medical Center. BCMA has received two National Performance Review Awards from then Vice-President Al Gore. Mr. Tucker was a USA Today - RIT Quality Cup Finalist in 2000, and received the Health Information Management Systems Society (HIMSS) Article of the Year Award in 2002. His Office has received a Way Paver Award from the UnSummit in 2006 and a

Cheers Award from the Institute of Safe Medication Practices (ISMP) in 2009. Mr. Tucker's has authored the following publications concerning the use of point of care medication administration technology:

- "Using BCMA Software to improve Patient Safety in Veterans Administration Medical Centers." Journal of Healthcare Information Management, vol 16, No.1,pg 46-51
- "VA pursues Bar Code Quality." American Journal of Health-System Pharmacists, July 2004
- "Using Point of Care to Reduce Medication Errors." Understanding Health Communications Technologies, edited by Michigan State University's Institute of Health Care Studies in collaboration with Kansas University Medical School's Health and Technology Outreach. Josey-Bass Publishers, September 2004
- "The VA's Multidisciplinary Approach to Bar Coded Medication Administration Implementation." Pharmacy Purchasing and Products, May 2009, vol 6, no.5
- "Quality-monitoring Program for Bar-Code-Assisted Medication Administration." American Journal of Health System Pharmacy, June 2009, Vol. 66

Catherine Whaley, PMP (Contractor)

EHR and BCMA Project Manager

Catherine Whaley is a Data Networks Corporation Project Manager based in Tucson, AZ. She holds an AAS in Accounting and an AA in General Studies from Anoka-Ramsey Community College with a PMP Certification from PMI. Her experience includes over 20 years of Information Technology including customer support, software development, design and development of classroom training documentation, training/instruction/facilitation, testing, business analysis, and project management. She has participated in the requirements gathering efforts and developed requirements for multiple applications. Since she started with IHS in 2010, she has worked as Project Lead for the 2012 Meaningful Use Certification project, Project Manager of the Stage 1 Meaningful Use Team and most recently Project Manager for the EHR Deployment and Training, eRx Deployment, and BCMA projects.

Jan-Erik R. Zeller, RN-BSN, MBA-TM

Education Project Manager

Employee Education System (EES0

Veterans Health Administration

Jan-Erik Zeller is currently a Project Manager with the EES Clinical IT Applications Division charged with developing and implementing education and training plans involving various VHA clinical applications projects. He specializes in clinical applications such as the Bar Code Medication Administration, Bar Code Expansion, Simulation, and CPRS packages. His professional career consists of eight years of IT experience followed by eight years of working as a registered nurse in the Neuro-Trauma and Surgical ICUs and three years working as a Clinical Applications Coordinator. He has served as a Subject Matter Expert for numerous clinical

applications and Root Cause Analyses. Over the years he has assisted with and presented at various health care related conferences.

Appendix A: BCMA Pharmacy Training Detailed Agenda

A.1 RPMS-EHR – Order Entry

Topic	Highlights	Local site notes
Order entry via Medication Dialog		
Order entry via Quick Orders	<ul style="list-style-type: none"> More standard; decrease potential error 	
Unit Dose Orders	<ul style="list-style-type: none"> Will appear on Unit dose tab in BCMA GUI 	
IV orders	<ul style="list-style-type: none"> Check Medication Route set up for IV routes: IV FLAG: YES// PROMPT FOR INJ. SITE IN BCMA: YES// DSPLY ON IVP/IVPB TAB IN BCMA?: YES// 	
IVP (IV Push) IVPB	<ul style="list-style-type: none"> Consider adding “IVP” as a route Will appear on IVP/IVPB in BCMA GUI 	
IV Infusion	<ul style="list-style-type: none"> Will appear on IV tab in BCMA GUI 	Delayed orders from ER/OP Transfer from OP
Transferred orders	<ul style="list-style-type: none"> Delayed orders from ER/OP 	Delayed orders from ER/OP Transfer from OP

A.2 Pharmacy RPMS – order Finish

Topic	Highlights	Local site notes
In General	<ul style="list-style-type: none"> Only ACTIVE orders will appear in BCMA ALL meds dispensed from Pharmacy must be bar coded 	Half-tab prepacks

Topic	Highlights	Local site notes
Schedule (8) – Admin Time	<ul style="list-style-type: none"> Schedule is associated with a default Admin Time, which determines when the dose is due Admin Time associated for all orders except PRN and IV infusions need to consider Admin Time in relation to when the first dose/order is to start 	Consider adjustments per local policy, e.g., insulin/meal times
Start Date/Time (3) - (discussion will use the site parameter – default of now) *(3)Start: 03/19/13 09:14 REQUESTED START: 03/20/13 09:00 *(5) Stop: 04/18/13 12:00	<ul style="list-style-type: none"> Site parameter determines when the order becomes effective Inpatient Ward Parameters Edit DEFAULT START DATE CALCULATION:? Choose from: 0 USE CLOSEST ADMIN TIME AS DEFAULT 1 USE NEXT ADMIN TIME AS DEFAULT 2 USE NOW AS DEFAULT Requested start is when first dose will be due 	
Daily (assume Admin Time is 0900)	<ul style="list-style-type: none"> Order entered up to 0859, order start will be order entry time, first dose will be due Today@0900 Order entered after 0901, Med will be due Tomorrow @0900 	If you have local policy you can back-up the start time, or you can get a separate NOW order for “today’s” dose
BID (0900-1700) Q6H (0600-1200-1800-2400), etc.	<ul style="list-style-type: none"> First dose will be the first scheduled Admin Time after the order entry/start time e.g. order @1001, BID due T@1700 Q6H due T@1200 	

Topic	Highlights	Local site notes
Q3D, Q7D, etc., (@0900)	<ul style="list-style-type: none"> Order entered up to 0859, order start order entry time, first dose will be due Today@0900 Order entered after 0901, <ul style="list-style-type: none"> Med will be due +3 days@0900 <p>Or:</p> <ul style="list-style-type: none"> Med will be due +7 days@0900 <p>e.g., fentanyl patch – determine when the next patch is due and adjust the start date accordingly</p>	
Weekly vs. Day-of-Week	<ul style="list-style-type: none"> “Qweek” vs a schedule which specifies the Day-of-the-week (e.g MO@0900) – the Day-of-the-week is much clearer in identifying what day the doses are due -MO-WE-FR schedule – system will know which days are Mon, Wed, Fri, etc. 	
NOW orders	<ul style="list-style-type: none"> Review the “now” time relative to the next scheduled dose (calculated start date/time) if any 	Check policy – if the NOW order is in the Provider comment – do you create a NOW order, back-time the current order, or require the provider to enter the NOW order
Complex Orders (duration type – titration or taper) (3)Start: 03/20/13 09:00 Calc Start: 03/19/13 09:14 *(5) Stop: 03/22/13 09:00 Calc Start: 04/20/13 12:00	<ul style="list-style-type: none"> Multiple orders generated in Pharmacy The orders are linked, so once all order components are verified, no changes can be made to any component When reviewing, check the Start & Stop Start is when first dose will be due Stop is when order stops, Note – NO doses will be due at this time Calc Start & Stop would have been the defaults The second component Start should be the Stop of the first component, etc. 	

Topic	Highlights	Local site notes
Dispense drug (12) -- Units / dose	<ul style="list-style-type: none"> The Dispense Drug on the order must be what is dispensed for the order -Units/dose identify the number of units dispensed, e.g. 2 (tabs) or 0.5 (half-tab) for the dose 	
Multiple dispense drugs	<ul style="list-style-type: none"> May have multiple dispense drug to make up dose, e.g., 10mg plus 5mg to make 15mg dose 	
Fractional Doses	<ul style="list-style-type: none"> -BCMA will prompt for a fractional dose – half tab, fraction of “ml”, UD cup, etc. Half tab “doses” are NOT fractional, if pharmacy provides the “split tab” 	
Changing dispense drug on verified order	<ul style="list-style-type: none"> If your stock availability changes, you may want to change the Dispense Drug Be aware of the Admin Time of the next dose, if the nurse still has sufficient supplies, do not change the Dispense Drug until their supply is exhausted The original dispense drug must be Inactivated by entering a date; then select the new Dispense Drug 	
Provider comments and Special Instructions (11)	<ul style="list-style-type: none"> EHR Provider comments may be copied into the Special Instructions field, which will appear in RED on the VDL Special Instructions may be “flagged” with an “!” to “pop-up” the instructions in a box in BCMA Be aware of alert fatigue – make sure the Special Instructions are important to warrant a pop-up PRN orders – per TJC – indications are required, should be included in the Special Instructions 	<p>Consider process on what should be flagged</p> <p>Include dosage reminder, e.g., 10mg= 0.5ml, if that is your policy; does not require pop-up</p>

Topic	Highlights	Local site notes
IVP and IVPB orders	<ul style="list-style-type: none"> As they are scheduled with Admin Times, will behave as the UD orders do relative to start date and due date/times “WS” bag numbers may be generated from scanning the components – IV additive and IV solution, if pharmacy does not provide IV label/bag, e.g., if pharmacy is closed 	
IV Admixture orders	<ul style="list-style-type: none"> Does not have a schedule, so order is active & available on BCMA as soon as pharmacy verifies the order “WS” bag numbers may be generated from scanning the components – IV additive and IV solution, if pharmacy does not provide IV label/bag, e.g., if pharmacy is closed If solutions are ward stocked (in Automated Dispensing Cabinets), pharmacy does not have to print label (does not need to generate IV bag number) 	If WS consider how the bag is to be labeled – patient’s name, rate, etc as required by TJC
Hyperal (TPN) orders	<ul style="list-style-type: none"> Similar order entry/finishing as IV Admixtures No “schedule”, adjust start date/time if it is to be hung beginning at a specific time 	

A.3 BCMA GUI

Topic	Highlights	Local site notes
In General	<ul style="list-style-type: none"> • Should be available in Pharmacy • (follow Nursing BCMA training) • BCMA full vs Read-Only Access for pharmacist • “Test scanning” can create med errors and throw off MSF reports, however “given” can be “undone” • Nurse scan patient’s wristband to bring the patient’s record • May use BCMA Limited Access if nurse would like to pull meds ahead or document prn effectiveness, mark doses held or refused 	
VDL – Virtual Due List	<ul style="list-style-type: none"> • Meds will be available once the medication order is Active, on the appropriate Tab, and Time Interval 	
Unit Dose tab	<ul style="list-style-type: none"> • All UD, aka, NOT IV type orders 	
IVP/IVPB tab	<ul style="list-style-type: none"> • IV push and IVPB orders 	
IV tab	<ul style="list-style-type: none"> • IV Infusions, TPN, no “schedule” 	
Cover Sheet	<ul style="list-style-type: none"> • Summary of active, recently expired & future (not yet due) orders 	
Fractional dose / Multiple dose	<ul style="list-style-type: none"> • Separate dialog box will display to remind nurse of the fractional or multiple dose (additional scanning required for each unit) 	
Missing Dose Request	<ul style="list-style-type: none"> • Nurse is able to request a “missing dose” from VDL – should print in Pharmacy 	

Topic	Highlights	Local site notes
"Unable to Scan" (UTS or UAS)	<ul style="list-style-type: none"> If bar code scan displays an error, or "unable" to get a good scan, nurse may use this option to be prompted to either type in the bar code or verify the 5 rights manually of the medication package(s) available before administering the dose 	
CPRS Med Order Button (if turned on)	<ul style="list-style-type: none"> Allows nurse to scan the medication package, in urgent or emergent situations, to generate an ACTIVE order in BCMA, and an alert in EHR for provider signature. Order will appear in Pharmacy as a Non-Verified order for retrospective review, & Pharmacist verification (report to be made available soon) 	Only allow for drugs on the Override list?
RN Finish key (if assigned)	<ul style="list-style-type: none"> Allow RN to finish orders, in the absence of a pharmacist Order still needs pharmacist verification??? 	

A.4 Special Consideration

Topic	Highlights	Local site notes
"First" dose of med (TJC)	<ul style="list-style-type: none"> Consider that a BLANK Last Action column in the BCMA VDL means that it is the FIRST dose, whether patient received as an outpatient or not 	
Sliding scale insulin – Continuous vs PRN order	<ul style="list-style-type: none"> Continuous orders will always prompt nurse to check blood glucose on schedule, if not needed enter dose of "0" units or mark order Held PRN orders will only require dose documentation if administered, but will not prompt for blood glucose checks 	

Topic	Highlights	Local site notes
Fill on Request items –	<ul style="list-style-type: none"> Used for multi-dose dosage forms, i.e., inhalers, topicals, etc., BCMA labels may be printed to include patient's name (TJC requirement) Missing Dose Request may be used to request additional 	
IV Label Reprint vs New Label	<ul style="list-style-type: none"> New label will create a new IV bag number ("V") Reprint label will also create a new IV bag number, but also invalidate the original bag number 	Add IV bag expiration to IV label
PCA Infusion	<ul style="list-style-type: none"> Finish a PCA as an IV fluid – easier for documentation Finish a PCA as PRN IV Push med - will require a "one-time" PRN Effectiveness in BCMA, which does not really provide accurate documentation of the assessment of pain/pain relief over the course of the infusion. A flow sheet or progress note document would be necessary 	
Auto-cancellation of orders on ward transfer	<ul style="list-style-type: none"> May be managed within EHR parameters or Pharmacy parameters 	
Order verification process /obtaining meds when Pharmacy is closed	<ul style="list-style-type: none"> Remote Pharmacy finishing <ul style="list-style-type: none"> RN Finish? CPRS Med Order button? Automated Dispensing Cabinets and Ward Stock 	
Pharmacist auto-verification of orders	<ul style="list-style-type: none"> Must be set for individual pharmacist Allows "accepting" and "verification" of order in one step 	An order left "unverified" by the pharmacist may be verified by a nurse, which will make it available on BCMA

Topic	Highlights	Local site notes
Contingency Plan	<ul style="list-style-type: none"> • Back up of Health Summary / MAH to a Contingency PC at pre-determined times (e.g. hourly); MAH would be printed if BCMA was unavailable • Print MAH from Pharmacy reports • Print Pharmacy Medication Profile • Use daily Pharmacy cart fill pick list 	
Policy consideration – variable doses	<ul style="list-style-type: none"> • Not recommended by TJC – use separate orders, including parameters, e.g., Percocet-5, 1 -2 tabs q4h prn pain – would be Percocet-5, 1 tab q4h prn for pain 2-5 & Percocet-5, 2 tabs q4h prn for pain 6 or greater 	
Policy consideration – variable schedule	<ul style="list-style-type: none"> • Adjust if your policy allows – e.g. morphine 2mg iv q4-6h prn pain > morphine 2mg iv q4h prn pain 	
“Flagged” orders	<ul style="list-style-type: none"> • Red flag block will appear on the BCMA GUI cover sheet, but not on the med/iv tabs 	

A.5 Troubleshooting

Topic	Highlights	Local site notes
Scanners	<ul style="list-style-type: none"> • Recommend that the scanners used throughout the facility, including Pharmacy are the same model 	-When a med does not scan for nurses at the point of care, a response from Pharmacy like “It scans in Pharmacy” doesn’t cut it with nurses.
Bar code scan, but error message “Drug Not Found”	<ul style="list-style-type: none"> • Check patient med order – is the dispensed product the same as the Dispense Drug, including strength? • If the product was repackaged – is the bar code on the package correct for the Dispense Drug? 	

Topic	Highlights	Local site notes
Drug File Inquiry [PSB DRUG INQUIRY]	<ul style="list-style-type: none"> Scanning bar code here will display the Dispense Drug associated with it, if the product is marked for Unit Dose use If “???” display, the bar code is not recognized or drug not marked for Unit Dose use 	
Synonym Enter/Edit [PSS SYNONYM EDIT]	<ul style="list-style-type: none"> Scanning bar code here will display multiple Dispense Drugs if the bar code (most often NDC) has been entered as Synonyms in multiple drugs; the NDC may only be associated with ONE Dispense Drug 	
PSD Patients on Specific Drug(s) [PSJ PDV]	<ul style="list-style-type: none"> If an Orderable Item or Dispense Drug is found to be a problem, this option may be used to find other orders for the same product 	
Bar Code Quality	<ul style="list-style-type: none"> Damaged bar code – printer printing too dark, or “misprints” of lines/spaced Bar codes on shiny/reflective paper – will be difficult to scan Insufficient “white space” around the linear bar codes -White bar codes on bags of clear IV bags may be difficult to scan. Try a dark background behind the bag when scanning. Manufacturer package bar code may be submitted to VA BCRO for analysis 	
IV bag labels	<ul style="list-style-type: none"> Order changes may invalidate the bar code – review BCMA parameters for EACH IV type –IVPB, Admixture, Hyperal, Chemo & Syringe 	Do you want the IV bag bar code to be valid if the only change is the schedule?

Topic	Highlights	Local site notes
Order is NOT appearing on BCMA VDL	<ul style="list-style-type: none"> • Is order still pending pharmacy review? • Check start date/time of order (in RPMS Pharmacy) • Check Admin Time of order – relative to Start date/time • Review the BCMA Cover sheet for summary of current, future and expired orders • Check the Virtual Due List Parameters - Start & Stop time – does this include the Admin Time associated with the order? • Check the Schedule Type on VDL parameters – especially if the order is PRN, one-time or On-call • Check the tab being viewed – UD, IVP/IVPB or IV • Occasionally “unknown” errors occur with an orders, where it appears in Pharmacy but not in BCMA – however error messages are generated which are sent to the designated mail group; also can be found in the BCMA Unknown Action report • Also possible to have provider enter a nursing “text” order for a medication (which will never get to pharmacy), instead of a medication order 	

A.6 Reports

Topic	Highlights	Local site notes
BCMA Unable to Scan (Detailed) On BCMA GUI	<ul style="list-style-type: none"> • Will provide report of when MSF is used, including the reason, can sort for meds only 	May be useful for troubleshooting
Missing Dose Follow-up [PSB MISSING DOSE FOLLOWUP]	<ul style="list-style-type: none"> • May be used to document follow up on missing doses and get report 	

Topic	Highlights	Local site notes
Pick List Menu ... [PSJU PLMGR]	<ul style="list-style-type: none">Pick List, which includes the Dispense Drug on the order, may be printed to identify what drugs are to be dispensed	

Appendix B: BCMA GUI Unit Dose Screen

Bar Code Medication Administration - v3.0.28.72

File View Reports Due List Tools Help

Missing Dose Medication Log Medication Admin History Allergies CPRS Med Order Flag

ZZQDDMO PATIENT (MALE)
SSN = 000-00-1212
DOB = 4/30/1928 (80)
Height = 193cm, Weight = 86.36kg
Location = BT 38M 38-168D X9053

Virtual Due List Parameters:
Start Time: 04/27@0700 Stop Time: 04/27@1100

Schedule Types:
☒ Continuous ☐ On-Call
☒ PRN ☐ One-Time

ALLERGIES: No allergies on file ADRs: penicillin

Status	Ver	Hsm	Type	Active Medication	Dosage	Route	Admin Time	Last Action
	xxx		P	ACETAMINOPHEN ORAL TAB ACETAMINOPHEN 325MG TAB FOR HEADACHE	650MG, Q4H PRN	ORAL		GIVEN: 4/15/2009@1302
	xxx		C	ALBUTEROL/IPRATROPIUM INHALER O... ALBUTEROL/IPRATROPIUM ORAL INH...	2 PUFFS, QID-INHAL	INHALATION ORAL	04/27@0800	GIVEN: 4/15/2009@1301
	xxx		C	ASPIRIN ORAL ENTERIC-COATED TAB,EC ASPIRIN 81MG ENTERIC CTD TAB	81MG, DAILY	ORAL	04/27@1000	
	xxx		C	HYDROCORTISONE TOPICAL 1% CREA... HYDROCORTISONE TOPICAL CR 1% (gr... FOR ITCHING	1 APPLICATION, BID	TOPICAL	04/27@1000	GIVEN: 4/15/2009@1301
	xxx	HSM	C	METOPROLOL ORAL ** NOT SR ** TAB METOPROLOL 50MG TAB *CAUTION -Sound-alike or Look-alike Drug name*	50MG, BID	ORAL	04/27@1000	GIVEN: 4/24/2009@1700
	xxx		C	NITROGLYCERIN TRANSDERMAL 0.2mg... NITROGLYCERIN PATCH 0.2mg/hr	0.2MG/HR PATCH, DAILY	TRANSDER...	04/27@1000	
	xxx		C	TIMOLOL OPH 0.5% SOLN,OPH TIMOLOL OPH SOLN 0.5% (ml) TO BOTH EYES	1 DROP, BID	OPHTHALMIC	04/27@1000	

Cover Sheet ☒ Unit Dose ☒ IVP/IVPB ☐ IV

Scanner Status: **Ready**

BCMA Clinical Reminders

Count	Activity
3	PRN Effectiveness

SHUM,DAPHEN C PERRY POINT Server Time: 4/27/2009 09:18